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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/651,913

08/29/2003

Eric Tan Swee Seng

108298733US

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09/21/2006

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EXAMINER

WILLIAMS, ALEXANDER O

ART UNIT

PAPER NUMBER

2826

DATE MAILED: 09/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/651,913	Applicant(s) SENG ET AL.	
	Examiner Alexander O. Williams	Art Unit 2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 8 and 10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9 and 11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2826

Serial Number: 10/651913 Attorney's Docket #: 108298733US

Filing Date: 8/29/2003;

Applicant: Seng et al.

Examiner: Alexander Williams

Applicant's Amendment filed 7/17/06 to the election of the species of figures 1A-5A (claims 1 to 7, 9 and 11) filed 9/9/05, has been acknowledged.

This application contains claims 8 and 10 drawn to an invention non-elected without traverse.

Claims 12-45 have been cancelled.

The drawings are objected to because in figure 4A, the label of "113" appears to be directed to the incorrect labeling of the first package contacts. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If

the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:
A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1 to 7, 9 and 11 are rejected under 35 U.S.C. § 102(e) as being anticipated by Baik et al. (U.S. Patent # 6,841,863 B2).

1. Baik et al. (figures 1 to 10) specifically figure 4 show a microfeature device package system **100**, comprising: a microfeature device **102**;

a plurality of device contacts **106** electrically coupled to structures within the microfeature device; a conductive structure **122** electrically connected to at least one of the plurality of device contacts, the conductive structure having a plurality of first **160** and second (**under 140**) package contacts accessible for electrical coupling to at least one device external (**104**) to the package, the first package contacts being accessible from a first direction for coupling and the second package contacts being configured to receive solder balls **140** and being accessible from a second direction for coupling, the second direction being opposite the first direction; an encapsulant **150** disposed adjacent to the microfeature device and the conductive structure, the encapsulant having apertures with aperture walls aligned with the second package contacts to contain solder balls carried by the second package contacts, the encapsulant being positioned against the conductive structure proximate to the first package contacts; and individual volumes of solder positioned at individual first and second package contacts.

2. The system of claim 1, Baik et al. show wherein the conductive structure includes a leadframe having a plurality of elongated leadfingers **122**, wherein the first package contacts includes generally flat, elongated surfaces of the leadfingers, and wherein the second package contacts include end surfaces of the leadfingers.

3. The system of claim 1, Baik et al. show wherein the microfeature device has an at least generally planar first surface facing in the first direction and an at least generally planar second surface facing in the second direction, and wherein the plurality of device contacts are positioned at least proximate to the second surface.

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4. The system of claim 1, Baik et al. show wherein the first package contacts are arranged in a first pattern, and wherein the second package contacts are arranged in a second pattern different than the first pattern.

5. The system of claim 1, Baik et al. show wherein the first package contacts **160** are arranged adjacent to a periphery of the package, and wherein the second package contacts are arranged in an array with at least some of the second package contacts spaced apart from the periphery of the package.

6. The system of claim 1, Baik et al. further comprising solder balls **140** disposed on the second package contacts.

7. The system of claim 1, Baik et al. show wherein the conductive structure **122** includes a leadframe attached to the microfeature device, and wherein the leadframe includes a plurality of elongated leadfingers, with each leadfinger having a first end portion positioned to make electrical contact a first type of external device, each leadfinger further having a second end portion wirebonded **130** to at least one of the device contacts, each leadfinger still further having an intermediate portion between the first and second end portions, the intermediate portion carrying a solder ball **140** to make electrical contact with a second type of external device.

9. The system of claim 1, Baik et al. further comprising the device external to the package, and wherein the device external to the package includes a printed circuit board (inherent) having circuitry electrically coupled to of the first package contacts or the second package contacts (see figure 10).

11. The system of claim 1, Baik et al. show wherein the microfeature device **102** includes a memory chip.

Claims 1 to 7, 9 and 11 are rejected under 35 U.S.C. § 102(b) as being anticipated by Chun (U.S. Patent # 6,043,430).

1. Chun (figures 1 to 8C) specifically figure 7 show a microfeature device package system **27'**, comprising: a microfeature device (**21, chip within 27'**);

a plurality of device contacts **21a** electrically coupled to structures within the microfeature device;

a conductive structure **23,23'** electrically connected to at least one of the plurality of device contacts, the conductive structure having a plurality of first (**under 29 on top of 27'**) and second (**under 29 on bottom of 27'**) package contacts accessible for electrical coupling to at least one device external **27** to the package, the first package contacts being accessible from a first direction for coupling and the second package contacts being configured to receive solder balls (**29 on bottom of 27'**) and being accessible from a second direction for coupling, the second direction being opposite the first direction; an encapsulant **25** disposed adjacent to the microfeature device and the conductive structure, the encapsulant having apertures with aperture walls aligned with the second package contacts to contain solder balls **29** carried by the second package contacts, the encapsulant being positioned against the conductive structure proximate to the first package contacts; and individual volumes of solder positioned at individual first and second package contacts.

2. The system of claim 1, Chun show wherein the conductive structure includes a leadframe having a plurality of elongated leadfingers **23'**, wherein the first package contacts includes generally flat, elongated surfaces of the leadfingers, and wherein the second package contacts include end surfaces of the leadfingers.

3. The system of claim 1, Chun show wherein the microfeature device has an at least generally planar first surface facing in the first direction and an at least generally planar second surface facing in the second direction, and wherein the plurality of device contacts are positioned at least proximate to the second surface.

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4. The system of claim 1, Chun show wherein the first package contacts are arranged in a first pattern, and wherein the second package contacts are arranged in a second pattern different than the first pattern.
5. The system of claim 1, Chun show wherein the first package contacts are arranged adjacent to a periphery of the package, and wherein the second package contacts are arranged in an array with at least some of the second package contacts spaced apart from the periphery of the package.
6. The system of claim 1, Chun further comprising solder balls **29** disposed on the second package contacts.
7. The system of claim 1, Chun show wherein the conductive structure includes a leadframe attached to the microfeature device, and wherein the leadframe includes a plurality of elongated leadfingers **23'**, with each leadfinger having a first end portion positioned to make electrical contact a first type of external device, each leadfinger further having a second end portion wirebonded **24** to at least one of the device contacts, each leadfinger still further having an intermediate portion between the first and second end portions, the intermediate portion carrying a solder ball **29** to make electrical contact with a second type of external device.
9. The system of claim 1, Chun further comprising the device external to the package, and wherein the device external to the package includes a printed circuit board **26** having circuitry electrically coupled to of the first package contacts or the second package contacts.
11. The system of claim 1, Chun show wherein the microfeature device **21** includes a memory chip.

Response

Applicant's arguments filed 7/17/06 have been fully considered, but are moot in view of the new grounds of rejections detailed above.

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The insertion of Applicant's additional claimed language, for example, "in claim 1" cause for further search and consideration to make this action final.

Applicant's amendment necessitated the new grounds of rejection. Accordingly, **THIS ACTION IS MADE FINAL**. See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

The listed references are cited as of interest to this application, but not applied at this time.

Field of Search	Date
U.S. Class and subclass: 257/E23.004,23.068,25.023,684,666,673,698,691,690,692 ,693,696,775,776,784,786,787,796	4/2/06 9/14/06
Other Documentation: foreign patents and literature in 257/ E23.004,23.068,25.023,684,666,673,698,691,690,692,693 ,696,775,776,784,786,787,796	4/2/06 9/14/06
Electronic data base(s): U.S. Patents EAST	4/2/06 9/14/06

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander O. Williams whose telephone number is (571) 272 1924. The examiner can normally be reached on M-F 6:30AM-7:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272 1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Alexander O Williams
Primary Examiner
Art Unit 2826

AOW
9/15/06